Appendix C

Part I: Derivation of the Model

I. Households

All households are assumed to be identical and obtain utility from money and leisure as well as each of the m produced goods. Each household solves the following maximization problem

$$(A1) \quad U^* = \max_{(C_i,M,N)} \left(C^{\gamma}(M/P)^{1-\gamma} - (\phi N^{\eta+1})^{1/\eta}\right)$$

subject to the constraint that

$$(A2) \quad M + \Sigma_i P_i C_i = I$$

where

$$(A3) \quad C = (\Sigma_i \alpha_i C_i^{(\theta-1)/\theta})^{\theta/(\theta-1)}$$

$$(A4) \quad P = (\Sigma_i \alpha_i^{\theta} P_i^{1-\theta})^{1/(1-\theta)}$$

and C_i is the consumption of produced good i, P_i is the nominal price of produced good i, M is the amount of money held at the end of the period, N is the amount of labor supplied, I is the total nominal value of resources available to the household, C is the bundle of consumption goods defined by the aggregator function in (A3), and P is a price index defined in (A4). (Note that the price index P in (A4) is not the fixed-weight GNP price index. The solution of the model produces prices for each of the m goods which can then be combined to calculate the appropriate fixed-weight GNP price index.) The parameters of the utility function are γ, which equals the share of the household's nominal expenditure on produced goods rather than on money balances; θ, which is the elasticity of substitution between the consumption of any pair of goods; α_i, i = 1,...,m, which indicate the weight of each good in the household's utility function; η, which is the elasticity of labor supply; and ϕ which characterizes the degree of disutility of labor.

The utility function in equation (A1) is additively separable between (C_i,M) and N. This separability allows us to solve the household's maximization problem in two stages. First, we will maximize utility with respect to C_i and M, and then we will choose the utility-maximizing level of labor supply N. Choosing C_i and M to maximize the utility function in (A1) subject to the constraint in (A2) yields the following first-order conditions:

$$(A5) \quad \alpha_i C_i^{-1/\theta} \gamma C^{\gamma-1+1/\theta} (M/P)^{1-\gamma} = \mu P_i$$

$$(A6) \quad (1-\gamma)C^{\gamma}(M/P)^{-\gamma}/P = \mu$$

where μ is the Lagrange multiplier on the constraint (A2).

Combining the first-order conditions (A5) and (A6) yields

(A7) $\alpha_i C_i^{-1/\theta} \gamma C^{(1-\theta)/\theta} M = (1-\gamma) P_i$

Multiplying both sides of (A7) by C_i and then summing over all i yields

(A8) $\Sigma_i \; P_i C_i = (\gamma/(1-\gamma))\; M$

Substituting (A8) into (A2) yields

(A9) $M = (1-\gamma) I$

Substituting (A9) into (A7), summing over all i, and using the definition of the price index in (A4) yields

(A10) $PC = \gamma I$

Substituting (A9) into (A7) and then using (A10) yields the demand for good i

(A11) $C_i = \alpha_i^{\theta} (P_i/P)^{-\theta} \gamma I/P$

Substituting (A9) into (A11) yields

(A12) $C_i = \alpha_i^{\theta} (P_i/P)^{-\theta} (\gamma/(1-\gamma)) M/P$

Having solved for the optimal values of C_i and M, we now solve for the optimal value of labor supply N. First, substitute the optimal values of C_i (eq. A11) and M (eq. A9) into the utility function in (A1) to obtain

(A13) $U^* = \max_N \; (\gamma^{\gamma}(1-\gamma)^{1-\gamma}(I/P) - (\phi N^{\eta+1})^{1/\eta})$

subject to $I = wN + rK^* + M + \pi$, where π is the (present value of) post-retirement health benefits to be received by the household.

The first-order condition for labor supply N is

(A14) $\gamma^{\gamma}(1-\gamma)^{1-\gamma}(w/P) = ((\eta+1)/\eta)(\phi N)^{1/\eta}$

which can be solved to obtain N*, the optimal amount of labor supplied

(A15) $N^* = \nu (w/P)^{\eta}$

where $\nu = [\gamma^{\gamma}(1-\gamma)^{1-\gamma}\eta/(\eta+1)]^{\eta}\phi^{-1}$

II. Firms

Each of the m goods is produced by competitive firms with Cobb-Douglas production functions. The total production of good i, Y_i, is given by the production function

(A16) $Y_i = A_i N_i^{\rho_i} K_i^{1-\rho_i}$ $\quad i = 1,\ldots,m$

The firms are assumed to be competitive and thus take the nominal price of their output, P_i, the nominal rental price of capital, r, and the nominal price of labor, $D_i w$, as fixed. Note that the nominal price of labor consists of two parts: w reflects the nominal wage rate excluding the cost of post-retirement health benefits covered by FAS 106. The factor D_i reflects the impact on the cost per unit of labor of post-retirement health benefits covered by FAS 106. For firms that do not offer post-retirement health benefits, $D_i = 1$. For firms that offer such benefits, $D_i > 1$. Competitive firms choose N_i and K_i to maximize

(A17) $P_i A_i N_i^{\rho_i} K_i^{1-\rho_i} - wD_i N_i - rK_i$ $\quad i = 1,\ldots,m$

The first-order conditions for labor and capital are

(A18) $\rho_i P_i Y_i / N_i = wD_i$ $\quad i = 1,\ldots,m$

(A19) $(1-\rho_i) P_i Y_i / K_i = r$ $\quad i = 1,\ldots,m$

Given the nominal wage w and the FAS 106 factor D_i, (A18) determines the amount of labor demanded in sector i; given the rental price of capital, (A19) determines the amount of capital demanded in sector i.

III. Market Equilibrium

Equilibrium in the factor markets requires that the aggregate amount of labor demanded equal the supply of labor and the aggregate amount of capital demanded equal the supply of capital:

(A20) $\Sigma_i N_i = N^*$

(A21) $\Sigma_i K_i = K^*$

The amount of money demanded equals the amount initially held by consumers

(A22) $M = M^*$

The amount of good i produced must equal the amount of good i demanded, so that using (A12) we obtain

(A23) $Y_i = \alpha_i^{\theta} (P_i/P)^{-\theta} (\gamma/(1-\gamma)) M/P$

The nominal value of production must equal the nominal value of total factor payments, including the (present value of the) cost of post-retirement health benefits,

$$(A24) \quad \Sigma_i P_i Y_i = rK^* + w\Sigma_i D_i N_i$$

The nominal value of total resources available to the household, I, equals the initial holding of money M^* plus capital income rK^*, wage income, $w\Sigma_i N_i$, and the present value of post retirement health benefits $\pi = w\Sigma_i (D_i - 1)N_i$ so that

$$(A25) \quad I = M^* + rK^* + w\Sigma_i D_i N_i$$

The solution to the model consists of the equilibrium conditions (A20) - (A25), the production functions (A16), the labor demand equations (A18), the capital demand equations (A19), and the definition of the price index (A4).

Part II: Calibration of the model

The model is calibrated so that in the absence of FAS 106 it yields an allocation of labor across sectors that matches the actual allocation of labor across sectors. It is also calibrated such that in the absence of FAS 106, all nominal prices are equal to one.

Inputs to the calibration procedure:

η, the elasticity of labor supply

θ, the elasticity of substitution between the consumption of any two goods

γ, the share of nominal expenditure devoted to produced goods

N_o^*, the initial total amount of labor to be allocated across sectors

K*, the fixed total amount of capital to be allocated across sectors

ρ_i, the share of labor in total cost in sector i

D_i, the FAS 106 cost factor in sector i (equal to 1 in the absence of FAS 106)

$s^N_i = N_i/N^*$, the fraction of labor employed in sector i

In the initial calibration, all nominal prices are set equal to one

(B1) $P_i = 1, \qquad i = 1,\ldots,m$

(B2) $P = 1$

The amount of labor initially used in each sector follows directly from the fraction of the labor force employed in sector i, s^N_i, and the total amount of labor employed, N_o^*

(B3) $N_i = s^N_i N_o^* \qquad i = 1,\ldots,m$

Define $s^Y_i = P_iY_i/\Sigma_i P_iY_i$ to be the share of sector i's output P_iY_i in total output $\Sigma_i P_iY_i$. Then using the labor demand equation (A18) and the fact that the total amount of labor employed is N_o^*, it can be shown that

(B4) $s^Y_i = (D_i s^N_i/\rho_i)/\Sigma_i(D_i s^N_i/\rho_i) \qquad i = 1,\ldots,m$

Using the capital demand equation (A19) and the fact that the total amount of capital used is K^*, it can be shown that

(B5) $K_i = [(1-\rho_i)s^Y_i/\Sigma_i(1-\rho_i)s^Y_i]\ K^* \qquad i = 1,\ldots,m$

Normalize $A_1 = 1$ so that the production function in the first sector is

(B6) $Y_1 = N_1^{\rho_1} K_1^{1-\rho_1}$

Using Y_1 from (B6), the nominal wage and the nominal rental price of capital can be determined from the first-order conditions (A18) and (A19) for sector 1 to obtain

(B7) $w = \rho_1 Y_1 P_1/(D_1 N_1)$

(B8) $r = (1-\rho_1) Y_1 P_1/K_1$

Now calculate ν in the labor supply curve (eq. A15) as

(B9) $\nu = N_o^* (P/w)^{\eta}$

To calibrate A_i, $i = 2,\ldots,m$, substitute the production function (A16) into the first-order condition for labor (A18) and set $P_i = 1$ (eq. B1) to obtain

(B10) $A_i = (D_i w/\rho_i)(N_i/K_i)^{1-\rho_i}$ $\qquad i = 2,\ldots,m$

Now set all prices equal to 1 in the equilibrium condition (A23), and use (A22) to obtain

(B11) $Y_i = \alpha_i^{\theta}(\gamma/(1-\gamma))M^*$

Summing (B11) over all i we obtain

(B12) $\Sigma_i Y_i = (\gamma/(1-\gamma))M^* \Sigma_i \alpha_i^{\theta}$

Now observe that with $P = P_i = 1$ for all i, equation (A4) implies that

(B13) $\Sigma_i \alpha_i^{\theta} = 1$

Substituting (B13) into (B12) and rearranging yields

(B14) $M^* = ((1-\gamma)/\gamma)\ \Sigma_i Y_i$

Finally, substituting (B14) into (B11) and recalling that when $P_i = P = 1$, $s^Y_i = Y_i/\Sigma Y_i$, we obtain

(B15) $\alpha_i^{\theta} = s^Y_i$ $\qquad i = 1,\ldots,m.$

EXHIBIT 2

Southwestern Bell Telephone Company Direct Case
CC Docket No. 92-101

Southwestern Bell's Experience With CustomCare:
An Example of Medical Care Cost Containment

SOUTHWESTERN BELL'S EXPERIENCE WITH CUSTOMCARE: AN EXAMPLE OF MEDICAL CARE COST CONTAINMENT

CUSTOMCARE

Like most companies in the U.S., Southwestern Bell has had to deal with rapidly rising health care costs.

Southwestern Bell Corporation, in conjunction with The Prudential Insurance Company of America and various other insurance carriers, developed the CustomCare plan. CustomCare offers participants choices and the opportunity to take a more active role in their health care. At the same time, the plan gives health care providers incentives to improve quality of care and maintain optimal standards.

CustomCare was designed to:

- mitigate health care cost trends;
- involve employees in health care purchasing decisions;
- control postretirement medical benefit costs;
- promote wellness;
- protect employees from catastrophic risk.

CustomCare blends the best features of Health Maintenance Organizations (HMOs), Preferred Provider Organizations (PPOs) and indemnity plans. From HMOs come precertification, utilization review and an emphasis on wellness; from PPOs, negotiated provider discounts; and from indemnity plans, flexibility and freedom of choice.

CustomCare's overall goal is threefold:

- to deliver appropriate care
- in appropriate settings
- at an appropriate price.

FINANCIAL PERFORMANCE OF CUSTOMCARE

From a financial perspective, CustomCare has been very successful. Southwestern Bell Telephone Company has successfully controlled its medical care cost as shown below:

- From 1987 to 1988 the per employee claims cost increased by 12 percent compared to the national average of over 20 percent.
- From 1988 to 1989, the increase was 7 percent, compared to the national average of 22 percent.
- And in 1990, the increase was 11 percent, compared to the national average of 22 percent.

FURTHER EVALUATION OF CUSTOMCARE

Numerous newspaper and magazine articles provide further evaluations that document the successes of Southwestern Bell's CustomCare plan. Copies of several of these articles (from The Wall Street Journal, Fortune, CFO and SBC Update) are attached.

News Clipping

Publication THE WALL STREET JOURNAL
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Southwestern Bell Corporation
Corporate Communications

Medical Experiment

Some Companies Try 'Managed Care' in Bid To Curb Health Costs

Physician Networks Negotiate Fee Discounts in Exchange For the Flow of Patients

The Southwestern Bell Test

By Ron Winslow
Staff Reporter of The Wall Street Journal

LITTLE ROCK, Ark.—Larry Bennett was suffering from Crohn's disease, a chronic intestinal ailment that caused him to lose 80 pounds, when he left the doctor he had been seeing for 10 years.

The 40-year-old safety manager at Southwestern Bell Corp. was happy with his doctor and trusted him. But the doctor wasn't on a list of physicians participating in the company's new health plan. Southwestern Bell promised Mr. Bennett that he would save money by switching, and he reluctantly went along.

Thousands of Mr. Bennett's co-workers did likewise, and in doing so they have also saved Southwestern Bell money.

The St. Louis telecommunications company is in the forefront of a movement that could reshape U.S. health care. Known as "managed care," it is corporate America's latest attempt to stanch hemorrhaging health costs, which a recent survey says have risen more than 40% in the past two years. On average, health care last year cost U.S. companies an amount equal to 26% of their net income, according to the survey, by A. Foster Higgins & Co., benefits consultants.

Quid Pro Quo

Under managed care, companies—usually through an insurance carrier—set up networks of doctors and hospitals that, in return for the flow of patients, negotiate discounts in the fees they charge. Employers give workers financial incentives to use the networks, whose quality, costs and services are monitored. Southwestern Bell won't say exactly how much money it has saved since it adopted the program in mid-1987. But a study Southwestern Bell commissioned says the company's costs rose 7% in 1989. The increase was held to less than 10% last year, Southwestern Bell says. That's less than half the national average increase.

"It comes around to applying good purchasing principles to the practice of medicine," says Craig Campbell, Southwestern Bell's associate director for benefits planning.

Most companies shy away from such direct involvement in their employees' personal lives, but so far, nothing has worked very well to curb health-care costs, which regularly outpace inflation. The Foster Higgins survey suggests why benefit managers and corporate executives are frustrated: Corporate medical costs soared 21.6% last year, the survey concluded, on top of a 20.4% jump in 1989. Half the 1,956 employers surveyed said current efforts to hold down prices and limit the use of medical services were having little or no effect.

Cost-Conscious Companies

For better or worse, hundreds of companies are likely to follow Southwestern Bell and others into managed care. "If costs in any other part of your business were going up 20% to 30%, you'd learn about it in a hurry," says Joseph Duva, a consultant with Ernst & Young and a prominent advocate of managed care. "Companies are going to be in the health-care business, not only as payers but as managers of cost and quality."

For Southwestern Bell, the results so far have been encouraging. In the first 2½ years of its plan, per-employee costs in the 13 cities where the company offers managed care as an option were 13% lower than would have been expected under its traditional fee-for-service plan, says Ron Z. Goetzel, director of data analysis at Johnson & Johnson's Health Management Inc. division, which has studied the effort for Southwestern Bell. In those cities, costs for employees who used the approved physician and hospital networks rose 6% in 1990, compared with 16% for employees who chose to see doctors outside the networks.

Plenty of Drawbacks

But Southwestern Bell also learned that managing health costs isn't easy. It upsets employees at first, and it has substantial startup costs. Employee satisfaction is high now, company surveys suggest, but ending longstanding relationships with particular doctors and hospitals is wrenching. And in the first year of managed care, the company's health costs *increased* 26%.

Managed care isn't, of course, the only game in town. In recent years, companies and insurers have resorted to a number of strategies to limit health expenses, among them requiring second opinions for certain surgery, and precertification of hospital admissions. One result: Hospitalizations have declined and outpatient treatment has soared. Spending is redirected—sometimes, but not always, curtailed.

Some companies use health maintenance organizations, or HMOs. The employer pays premiums, and the HMO provides medical services and manages costs. The employee sees doctors employed by the HMO. Unfortunately, HMO costs and premiums in recent years have risen in tandem with group health-insurance reimbursements.

Managed care in some ways is an amalgam of these other strategies, and its success is far from certain. Robert Eicher, a principal with Foster Higgins, says he has seen some managed-care plans in which savings from negotiated discounts were wiped out when doctors started billing for additional services. From the patient's standpoint, "success" also hinges on whether or not discount service turns out to be inferior care.

Even some supporters believe that while many companies will benefit initially from the managed-care approach, it is ultimately doomed unless Congress sets a national health-care budget. "Managed care is nothing other than buying health services wisely," says Walter Maher, director of federal relations at Chrysler Corp. "It still has to work within a structure that controls [total] health expenditures."

Too Early to Tell

For now, while more and more companies are adopting the approach, few have been at it long enough to gauge its effectiveness. "At this point, we don't have enough managed care in place to have any impact on national statistics," says Carl Schramm, president of the Health Insurance Association of America.

So Southwestern Bell's experience is interesting as a test case. The company's effort began in 1986, when it decided to make health costs a priority issue in bargaining with the Communications Workers of America. The company had cause for concern: Between 1979 and 1985, its spending on health benefits had jumped 217%.

But union cooperation was essential, and the CWA didn't want to see benefits undermined. The union appreciated the problem. "At the time, we looked at it as a choice between two evils—help them pay, or help them save money," says Victor Crowley, an official of the CWA in St. Louis, which represents about 45,000 of the Southwestern Bell's 67,000 employees. Ultimately, company and union agreed to maintain benefits at existing levels. Southwestern Bell would assume a role in employees' health-care decisions, and the union would help develop the new approach.

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Southwestern Bell Corporation
Corporate Communications

The plan devised, known as Custom Care, is administered by Prudential Insurance Co. of America, which set up doctor and hospital networks in 13 cities in five states, making it available to 65% of the company's 87,000 workers and retirees. Those who select network care choose a participating general practitioner, who assumes responsibility for managing the patient's care. That can mean making referrals to specialists, ordering diagnostic procedures, and sending the patient to the hospital. Employees pay $10 per doctor visit, and the plan covers 100% of everything else except prescription drugs and certain long-term psychiatric treatment.

Network and Independents

Employees can still visit a doctor outside the network any time they wish, but they must pay the price—currently a $350 annual deductible for an individual, and a 20% co-payment (up to a maximum of $2,350 per year).

A third option for Southwestern Bell employees is an HMO, for which the company pays the annual premium. But benefits aren't as comprehensive, and employees pay the full cost of any care they seek outside the HMO.

For Mr. Bennett, the safety manager, the choice was difficult. "You knew this was being done to save money," he says. "The biggest question was: What kind of quality were we going to get?" In the end, fearing that his illness was going to be expensive, he chose Custom Care.

Despite cost incentives, as well as months of meetings and newsletter mailings to acquaint employees with the program, many of Mr. Bennett's colleagues were wary.

Expensive Start

One major problem occurred in St. Louis when the plan was first offered. Employees had to choose between Custom Care and the HMO option before Prudential had time to set up a network there. Not knowing who their doctors might be, 12,000 employees—nearly 20% of the work force—selected an HMO. That was a costly decision for Southwestern Bell. The company paid an average HMO premium of $1,966 for those employees. Custom Care, it was reckoned, would have been less expensive-averaging $1,673. The difference cost the company an extra $36 million in 1987.

Additional costs were incurred when many employees scheduled elective surgery for early in 1987, before the new plan kicked in. Also, a lot of employees were making unaccustomed visits to doctors because the company was urging those who signed up for Custom Care to establish relationships with new physicians. All of that cost Southwestern Bell money. When its medical expenses rose 26% the first year, "there were a few concerned individuals upstairs," says Mr. Campbell, referring to senior executives.

The biggest hang-up for most participants was having to change doctors if it so happened that their own doctor hadn't joined the network. Ruth Krone, a St. Louis employee who had had open-heart surgery in 1984, gave up her cardiologist in 1987 because he wasn't in the network, and now she sees various heart doctors on referral from her primary-care physician. "I'm really happy with Custom Care, but I hated the part of losing my heart doctor," she says.

Prudential won't disclose details of its discounting arrangements, other than to say that prices paid to network members are lower than the customary charges paid under traditional insurance. Prudential says it carefully screens doctors for board credentials, malpractice history and other criteria and selects for its networks those who agree to certain quality standards. The insurer also monitors the doctors, using various cost and quality measures.

Southwestern Bell surveys its employees, 84% of whom last year said they thought the quality of Custom Care was excellent or very good. It uses data generated by Johnson & Johnson to monitor Prudential's performance. That "keeps Prudential focused on what is going on in the field," says Mr. Campbell.

Gradually the program has won acceptance among employees. One big plus: Patients going to network doctors don't have to fill out claim forms. Another: They might pay next to nothing for major surgery, while people who go outside the network have had to pay hundreds of dollars (up to the capped maximum) from their own pockets.

Enrollment in the company plan among eligible employees rose to 83% in 1989 from 77% in 1987, says Mr. Goetzel of Johnson & Johnson, while HMO enrollment declined. Nearly 3,700 employees who live in cities where networks aren't available have actually commuted to network cities for health care. And last year, 85% of medical dollars spent in network cities were paid to network providers, up from 75% in 1988. "As more and more employees face a big [medical] event, they do come into the network and they stay," Mr. Campbell says.

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Sheet ___ of ___

Southwestern Bell Corporation

Corporate Communications

H.MO Cost Misstated

Your Feb. 1 page-one article "Medical Experiment" misstates the difference in cost between an average HMO premium vs. an average Custom Care premium for 12,000 Southwestern Bell employees. The article cites the cost difference as $36 million. It should be $3.6 million.

PAUL S. NORRIS

Jenkintown, Pa.

YES, COMPANIES CAN CUT HEALTH COSTS

Most corporate medical bills are still rising at a feverish pace. But a growing number of employers are fighting back with a potent remedy: managed-care networks. ■ *by Ronald Henkoff*

No longer content to be the passive paymasters of America's ever more expensive private health care system, corporate executives are going on the attack. Their new remedy: managed-care networks. Under these programs, companies steer employees to handpicked groups of doctors and hospitals that pledge not only to cut their fees but also to practice medicine according to a prescribed set of guidelines. "Everyone needs a boss," says Craig Campbell, associate director of benefits at Southwestern Bell. "Medicine in the U.S. has operated on a wide-open basis for too long. It pays to manage it."

Companies that don't manage their medical costs could be killed by them. According to the benefits consulting firm A. Foster Higgins, employers who stick with traditional insurance plans alone will be spending about $22,000 per worker annually on medical benefits by the year 2000—42% more than the $15,463 it projects the national average will be.

Top management at Southern California Edison, the nation's fifth-largest electrical utility, used to view employee health care

Southwestern Bell's network members pay just $10 to visit obstetrician Kathy Maupin.

is a benevolence—until it became the fast-
st-growing item in the corporate budget.
Says Chairman John Bryson: "We didn't
have the same concern for cost and quality
providing medical benefits as we did build-
ng a power plant." In January 1989 the
tility pulled the plug on its longstanding
nsurance plan, began requiring employee
ontributions, and established the largest
ompany-sponsored managed-care net-
ork in the U.S. Last year medical costs
ent up just 5.7%, vs. 23% in 1988, saving
Edison some $38 million so far.

Similarly, Southwestern Bell, a pioneer
n managed-care networks, has held the an-
ual increase in its health costs to under
0%, roughly half the national average, for
wo years running. Companies as diverse as
Allied-Signal, General Electric, Sears Roe-
uck, Marriott, and Monsanto now deploy
anaged-care networks as an essential
eapon in the war on health costs.

THINK of these networks as the medical equivalent of lite beer: everything you ever wanted in a health care system—and less. By arefully monitoring the behavior of physi-ians they have under contract, they pro-uce less inefficiency, less time in the ospital, fewer unnecessary procedures, less atrogenesis (doctor-induced illness, such as eedlessly prescribing medication with armful side effects), and, of course, lower osts. But networks also offer *more*. Pro-rams typically pay for a host of preventive ervices that traditional plans usually skimp n—physicals, mammograms, well-baby ex-ms, and inoculations. Another plus: Doc-rs, not patients, usually fill out and send in surance claim forms.

These networks are sometimes called pen-ended health maintenance organiza-ons" because, unlike basic HMOs, they al-w plan participants to elect at any time to e non-network doctors. Few do, since the ut-of-pocket cost is higher. Still, for many mployees, this option is the spoonful of igar that helps managed medicine go own. Says Campbell of Southwestern Bell: This is the United States. People don't like be locked in. They want some freedom of oice."

For companies, managed-care networks e appealing because they replace the nor-al hodgepodge of medical coverage—one an for hospitalization, another for outpa-ent procedures, plus a smattering of inde-endent HMOs—with one administrator, pically an insurance company, that runs the show. Better still, this administrative agent usually puts some of its own money at risk, by vowing to hold cost increases below a set rate. Failure forces the insurer to pick up part of the overrun.

What's the catch? For one thing, doctors and patients are more restricted. Consider CustomCare, the trendsetting program introduced by Southwestern Bell in 1987 after its health costs rose a sickening 217% over six years. Employees covered by CustomCare's network pick an approved internist or other primary-care physician, who acts as a "gatekeeper," regulating all access to specialists and hospitals. For some workers, that means abandoning a doctor they have known and trusted for years. It also means that an employee suffering from, say, a sore throat is no longer fully covered if he bypasses his internist and heads straight for a higher-priced otolaryngologist.

Prescribing how doctors practice, as opposed to simply fretting about the prices they charge, is pushing companies and insurers into unfamiliar and potentially litigious territory. Although he agrees managed care is more efficient, Dr. Robert Brook, director of the health sciences program at Rand Corp., notes that it does not eliminate *only* inappropriate care: "It gets rid of things you need as well as things you don't." The issue of employer liability is untested in the courts. But as Steven Epstein, a partner in a Washington, D.C., law firm, warns, "The more vigorous a managed-care network's cost-containment efforts, the higher the risk."

Apparently, most benefits managers figure standing pat is even riskier. With good reason. In 1990 the average cost of traditional indemnity plans—which allow insured patients to consult the doctor of their choice and damn the expense—shot up 21.6% over 1989. That was the third annual twentysomething increase in a row, according to Foster Higgins.

Every previous effort to fix this longtime staple of private health insurance in America has been a bust. Sticking employees with steeper premiums and higher deductibles has alienated workers but done nothing to rein in doctors' fees. Forcing patients to seek a second opinion before undergoing surgery hasn't worked either. Aetna Life Insurance recently advised customers to scrub its 15-year-old second-opinion program after finding dissenting views in only 3% of the cases. Says Dr. Robert Sigman, an Aetna medical director and surgeon: "Second opinions actually cost employers more than they save."

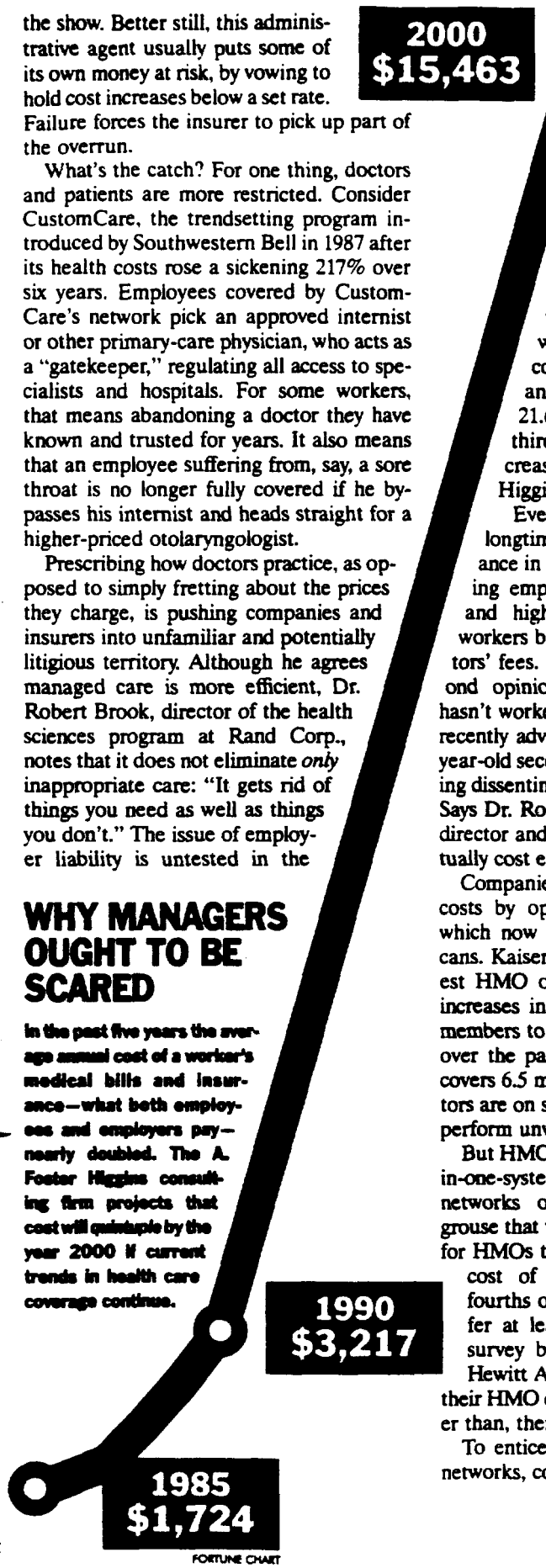
Companies can exert some control over costs by opting for conventional HMOs, which now serve some 37 million Americans. Kaiser Permanente, the nation's largest HMO operator, has managed to hold increases in the premiums it charges plan members to an average annual rate of 11% over the past five years. At Kaiser, which covers 6.5 million patients in 16 states, doctors are on salaries and have no incentive to perform unwarranted procedures.

But HMOs do not provide the kind of all-in-one-system coverage that managed-care networks offer. And benefits managers grouse that the per-employee rates they pay for HMOs too often shadow the per capita cost of traditional insurance. Three-fourths of American companies now offer at least one HMO, according to a survey by the benefits consulting firm Hewitt Associates. But 63% of them say their HMO costs are rising as fast as, or faster than, their indemnity plans.

To entice employees into managed-care networks, companies must first craft a clev-

WHY MANAGERS OUGHT TO BE SCARED

In the past five years the average annual cost of a worker's medical bills and insurance—what both employees and employers pay—nearly doubled. The A. Foster Higgins consulting firm projects that cost will quintuple by the year 2000 if current trends in health care coverage continue.



FORTUNE CHART

PHOTOGRAPH BY MICHAEL L. ABRAMSON

For the Millers of St. Louis, managed care meant 11 weeks of hospitalization—nine for the baby—free.

er concoction of carrots and sticks. At Southwestern Bell, the administrator—Prudential Insurance—screens participating physicians for quality. No more than 20% to 30% of an area's doctors are invited into a network. All must have clean malpractice records, admitting privileges at top hospitals, and certification from a medical specialty board.

THE BIGGEST CARROT is price. Unlike other companies, Southwestern Bell has not imposed higher annual premiums and deductibles. Employees who join its managed-care network pay only a flat $10 fee each time they see a network doctor. All other medical expenses are picked up by the company. But workers who exercise their option to consult a non-network doctor encounter some sharp sticks. A family of three, for example, pays a $1,050 annual deductible and 20% of all bills above that, up to a maximum of $4,200.

When Southwestern Bell surveyed employees about how CustomCare was working last year, the regional telephone company got rave reviews: 84% rated the quality of network care "very good" or "excellent," and 92% said they would be willing to recommend their primary care doctor to a friend.

Craig Miller, 36, a maintenance mechanic in St. Louis, is one of those satisfied customers. Last year Miller's then-pregnant wife, Sandra, was hospitalized with preeclampsia, a condition characterized by dangerously high blood pressure. She gave birth to a premature baby girl, who had to spend nine weeks in the hospital. Later, Mrs. Miller needed to have her gallbladder removed. The out-of-pocket cost for all this? Zero. Says Miller, whose wife and daughter Emily are now in good health: "You couldn't have asked for any better treatment from the hospital, the doctors, or the benefits people."

Management's main worry is that CustomCare is too limited: 35% of the company's 87,000 active and retired employees are still covered by indemnity insurance, and their costs continue to climb more than 15% a year. Many in this group work in small towns, where doctors and hospitals face scant competition and have little incentive to join a network.

WHY do managed-care networks save employers money? Partly because they induce hospitals and doctors to discount their fees as much as 30% by promising them a steady flow of patients. Such medical markdowns are not new. They are the hallmark of so-called preferred-provider organizations (or PPOs), an option now offered by 37% of all employers, according to Hewitt Associates. But the flaw in the PPO approach is that it allows doctors, ever inventive at finding ways to sustain their incomes, to beat the system by performing more procedures. Says Rebecca Rush, vice president of group marketing in Prudential's southwestern region: "The key to cost control is not the fee but the appropriate level of utilization."

Has an orthopedic surgeon ordered significantly more magnetic resonance imaging scans (at an average of $1,000 a zap) than his colleagues? Has an obstetrician performed an above-average number of Caesarean sections? In the Pru's networks, those events may trigger a talk with one of its staff doctors. If practitioners cannot satisfactorily explain their actions, they must pledge to reform. If the problem persists, says Rush, "we may have to come to a parting of the ways."

Few companies have gone to greater lengths to control utilization than Southern California Edison. HealthFlex, its managed-care network, serves 55,000 employees, retirees, and dependents and consists of some 7,500 doctors (15 work full time for the utility, 100 serve in eight on-site clinics for 26 hours a week, and the rest are under contract), 85 hospitals, and an in-house discount pharmacy. All this is overseen by medical director Jacque Sokolov, 36, a cardiologist who worked as a health care management consultant before joining Edison in 1987. He is now an officer of the company.

Aided by a sophisticated computer system, Sokolov's staff monitors every interaction between an employee and a health care professional—some 700,000 "patient encounters" a year. Company pharmacists, for example, recently discovered that some network doctors were prescribing ciprofloxacin,

REPORTER ASSOCIATE *Rahul Jacob*

an antibiotic that fetches a whopping $3.50 per tablet, for upper respiratory infections. In at least some cases, Edison's professional review committee concluded, the physician first should have tried a less-expensive remedy, erythromycin perhaps.

Edison executives profess satisfaction with HealthFlex, but they have had a hard time winning over organized labor. The utility bargained with its three unions for nine months in 1988 before declaring an impasse and imposing the program unilaterally. One of the unions' main objections: cost sharing. Workers previously paid nothing for their own medical care and 20% of the bill for their dependents. Now employees with families must pay an annual deductible of either $200, $800, or $2,000—they get incentives, such as extra vacation days, for choosing the higher ones—and 10% of all charges for network doctors. When they venture outside the network, workers are responsible for at least 30% of all fees.

Dr. James Todd of the AMA believes that economists and statisticians monitoring medical costs don't have patients' best interests in mind.

Union leaders also claim that while they have no quarrel with managed care in principle, they feel strongly that someone other than their employer should be doing the managing. Says Willie Stewart, an employee of Local 47 of the International Brotherhood of Electric Workers, which represents 6,000 Edison workers: "It seems obvious that if a doctor's salary is paid by the company, then his loyalty is going to be to the company and not the patient." At times, a supervisor eager to regain the services of an injured employee may try to pressure his doctor into declaring him fit for work. Sokolov says he has a standing order to physicians in such cases—tell the supervisor to take a hike.

Companies with neither the desire nor the dollars to get so intimately involved in the business of medicine can still practice a degree of managed care. They can sign on with any of more than 150 "utilization review" firms, many of which are owned by insurance companies. Representatives of these outfits, usually registered nurses, act as remote-control gatekeepers. Fielding telephone calls in a central office, they decide whether patients facing surgery have to be hospitalized; if so, for how many days; and, increasingly, whether they even need an operation at all. In making those judgments, the nurses rely on manuals and computer programs packed with clinical guidelines and statistical information showing, for example, the median number of days last year that patients west of the Rockies tarried in hospital after an appendectomy (three days for patients under 50).

At Aetna's health care management center in Santa Ana, California, 35 nurses control the health affairs of 200,000 employees at 500 different companies. In a sleek glass office tower, just a few snarled miles down the freeway from Disneyland, the room hums with the sound of female voices and clicking computer keyboards. On a recent spring morning, a patient calls seeking authorization for a septoplasty, a surgical procedure that relieves breathing difficulties by straightening out the cartilage in the nose.

Nurse C. Ann Greene brings up a protocol of questions on her Macintosh and poses them to the caller. What are his

HOW TO PROFIT FROM RISING HEALTH CARE COSTS

Stop looking at those bills as a one-way drain on your wallet. Think of them instead as a reason to invest in a fast-growing business that, other than HMOs, was barely a blip on the national oscilloscope ten years ago—medical cost containment. Here are four standout companies.

HealthCare Compare of Downers Grove, Illinois (1990 sales: $42 million) is one of the largest utilization review specialists. In 1990 it delivered a dazzling 221% total return to investors, fifth best on the OTC. Despite a recent price of 71 times the most recent four quarters' [illegible] Dale Landau of stock brokerage Funk Ziegel & Knoell in New York City rates the stock a "buy" at $40.75 a share, figuring 1991 earnings will double.

Preferred Health Care Ltd. (1990 sales: $36 million) focuses on holding down costs of psychiatric care and substance-abuse treatment. Analysts expect the Connecticut company, which recently won contracts from General Motors and Ameritech, to lift earnings 22% this year and 45% in 1992. Recent price: $19.75.

Medco Containment Services (1990 revenues: $1 billion) of Montvale, New Jersey, commands more than 50% of the expanding market for mail-order prescription drugs. The drugs are discounted; the stock price, recently $50.75, isn't.

U.S. Healthcare of Blue Bell, Pennsylvania, is the largest publicly held HMO (1990 revenues: $1.3 billion). It also led the latest FORTUNE Service 500 with a total return to investors of 116% in 1990. Resisting the siren call of nationwide expansion that has shipwrecked other HMO operators, the company has stayed focused on the Northeast and recently sold for $37.50 a share. Margo Vignola of Salomon Brothers thinks earnings will at least double in 1991.

At Baker Hughes, employees who test well at its "health fairs" get credits toward their medical costs.

symptoms and how long has he had them? What kind of medication has he tried? Is his breathing worse at different times of the year or around dogs and cats? Is he doing this to improve his appearance? Satisfied that the man isn't secretly angling for a nose job and that he has pursued alternative remedies, the computer program certifies the surgery.

More than 75% of American companies now require employees to go through some form of utilization review. The approach has its shortcomings. Physicians, who intensely dislike being telephonically second-guessed by nurses, complain that the reviewers' training is sometimes spotty. Dr. James Todd, executive vice president of the American Medical Association, argues that doctors can, and should, police themselves: "Utilization review is a very poor substitute for peer review. When economists and statisticians are involved, they don't have the best interests of the patient in mind."

Even so, companies desperate to control costs are already moving beyond utilization review to another concept—case management. This technique is usually reserved for patient encounters of the megabucks kind—organ transplants, terminal cancer, mental illness, and substance abuse. When Steve McMenamin, a Southern California Edison information systems manager, suffered nearly fatal congestive heart failure in January, his employer micromanaged his entire case. Edison's medical department picked Cedars-Sinai Medical Center in Los Angeles as the place to have a heart transplant and negotiated a below-market, all-inclusive price. Now an Edison utilization nurse is acting as McMenamin's case manager, guiding him through a rehabilitation program. Says McMenamin, 35, who recently returned to work part time: "I feel very, very good about this. I was placed with the people best able to save me."

By adopting techniques like case management, companies and insurers are meddling in the health affairs of employees to a degree that would have been unthinkable a few years ago. Take substance-abuse treatment, a breathtakingly expensive outlay for many employers. Union Carbide discovered three years ago that of the 14 employees and dependents whose annual medical bills topped $100,000 each, six were adolescents with drug and alcohol problems. Now all Carbide patients needing such care are assigned a case manager, who requires therapists to submit specific treatment plans for approval. Carbide figures the new approach saved $1.4 million last year.

Edison's Jacque Sokolov, left, oversees eight clinics and 7,500 doctors.

CRITICS CHARGE that managed-care networks, in their zeal to police doctors, run the risk of creating a private-sector health care bureaucracy of inestimable complexity. Physicians in Los Angeles, Chicago, Houston, and St. Louis already sign on with as many as ten managed-care organizations, each with its own guidelines and utilization review procedures. A recent survey of doctors by *Medical Economics* magazine turned up a multitude of complaints about managed care: internists compelled to refer patients to specialists they did not know, utilization nurses who denied hospital care to people who were critically ill, and mountains of paperwork.

But managed care *can* be effective without being overbearing, as the top HMOs have already demonstrated. Networks seem to work best when they look on doctors as partners, not as potential miscreants needing interdiction. Dr. Kathy Maupin, a St. Louis area obstetrician, participates in four networks, including Southwestern Bell's CustomCare, and has been actively helping Prudential develop guidelines for gynecological surgery. Says she: "Managed care is fine. Physicians actually participate in the management. The alternative is socialized medicine, Big Brother in Washington telling us what to do."

One valid complaint often levied against managed-care networks is that they offer merely a localized fix to a problem that requires a national solution. That's true, but until utopia arrives, corporate executives have to survive in the real world, one in which health care costs have a way of gravitating to private consumers with the biggest wallets. Managed care gives companies some control over how hard they get pinched.

STRONG MEDICINE FOR HEALTH COSTS

Companies feeling blue—or in the red—over feverish employee medical expenses have found some relief. Just take an HMO and add a twist.

■ *by Edmund Faltermayer*

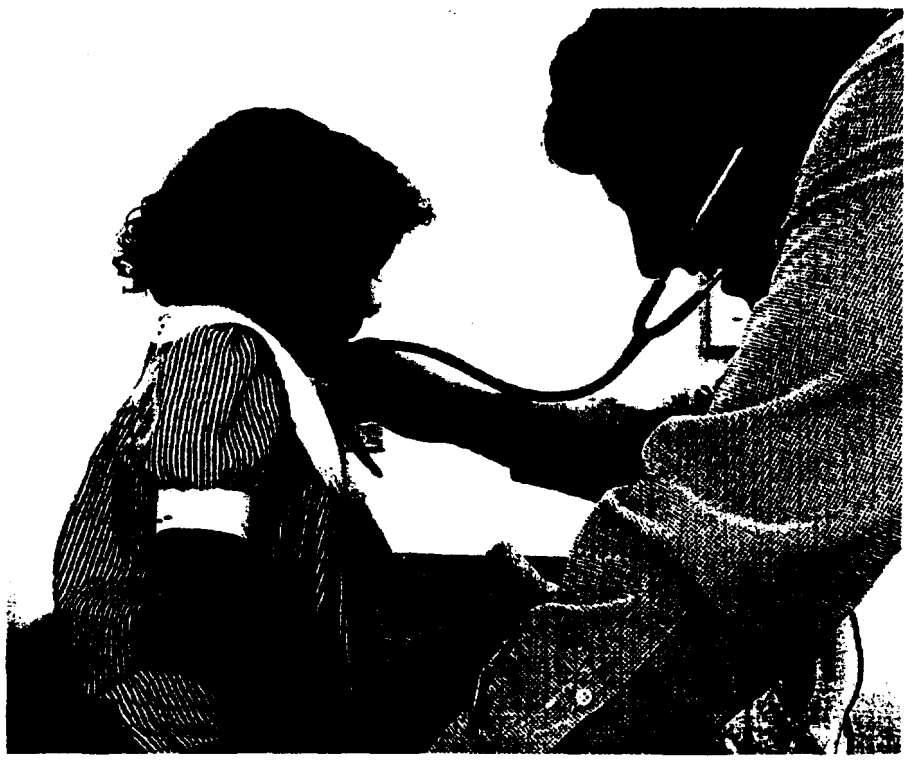
WHAT ARE NOW EQUAL to half of all pretax profits and rising fast? Answer: company health benefits. No wonder managers are desperate. And no wonder many of them are marveling at a plan adopted by one big outfit to cut the costs after its own bill spurted 39% in 1987.

Allied-Signal, the aerospace and automotive parts maker in Morristown, New Jersey, made an innovative deal with Cigna, the Philadelphia insurer. Cigna took over the health care of all Allied's non-union employees and guaranteed to hold cost increases to single digits. Result: Cigna, which ran a nail-biting risk, is making good money on the deal. More important, total health costs for employees in Allied's new plan rose last year by a mere 4%.

What Cigna did was simply add a new twist to the old health maintenance organization. Ordinary HMOs, designed to hold down costs, charge fixed annual fees for each member. Patients can see their HMO's doctors—and only them—at no cost or for minimal extra fees. But in Cigna's system, known as the open HMO, or point-of-service system, patients are also free to go *outside* the HMO whenever they need care. In that case, the plan still pays, but only 80 cents on the dollar and only after the year's expenses exceed a fairly stiff deductible. This feature attracts those who might otherwise reject being locked into a limited network of doctors and hospitals. Yet once in the plan, employees rarely use the option to stray outside.

When participants stick with the HMO, they start by seeing one of its "primary-care physicians," the present-day counterparts of the traditional family doctor. Their mission: to treat as much as possible and to act as gatekeepers, barring excessive tests, visits to specialists, and hospitalizations at up to $2,000 a day. This, of course, can substantially reduce costs.

REPORTER ASSOCIATE *Rosalind Klein Berlin*



Enlisted to reduce waste: family doctors like Phoenix's Glen Stockton, with Monica Gazman, 3½

The open HMO has excited so many companies that last November their benefits managers all but broke down the doors to an unpublicized two-day meeting in New York City organized by Allied-Signal to share its experience. On hand was Dr. Paul M. Ellwood Jr., a longtime reformer of the system who heads a Minneapolis medical-research organization called InterStudy. Says Ellwood: "Two-thirds of these companies will be doing the same kind of thing in three years." Employers offering plans like Allied-Signal's, or well along in preparations, include May Department Stores, Marriott, Intel, and Sears.

A few years ago Southwestern Bell's health costs per employee were rising as much as 20% annually. Then the company offered everyone, except those in rural areas and small towns, a point-of-service plan run by Prudential. Last year the increase was considerably less than 10%. For employees using Procter & Gamble's similar plan set up by Metropolitan Life, the annual increase has plunged from 15% to a bit more than 6%. Says Lawrence B. Leisure, head of group benefits at the Towers Perrin consulting firm: "The train is coming down the track in the direction of point of service."

If so, the HMO movement may get a new

PHOTOGRAPH BY STEVE SMITH—ONYX

burst of speed. Membership tripled to 32.5 million in the 7½ years through mid-1989. But according to InterStudy, traditional HMOs grew only 1.7% in last year's first half, while membership in the open variety leaped 14%, to 700,000. Independent HMO companies—those not owned by insurers—are just now designing or testing open-ended versions. But Prudential and Cigna are on a tear.

In ten years, predicts G. Robert O'Brien, head of Cigna's employee benefits business, more than half of all U.S. workers in company health plans will be in HMOs, up from about one-fifth today. Most of the growth, he says, will be in open-ended plans.

Cigna has been aggressively investing in new HMOs, which take about four years to break even. Its HMOs lost $139 million after taxes in 1988, O'Brien says, but only $35 million last year. He promises a profit in 1990. Cigna has just agreed to pay $777 million for Equicor, a joint venture of Equitable Life and Hospital Corp. of America. By adding Equicor's 450,000 HMO members to its own 1.5 million subscribers, Cigna will widen its lead over Prudential as No. 1 among commercial insurers. Also betting heavily are Aetna and Lincoln National.

With so many companies selling the new plans—and good numbers coming from Allied-Signal and others—it seems premature to call for national health insurance. A year ago many corporate chiefs, particularly heads of smokestack companies with more than their share of retirees drawing medical benefits, began clamoring for a government takeover. But this amounts to abandoning hope that competition will ever rein in health costs, and invites the price controls—and possibly rationing—that a government program would bring. Medicare, the federal program for the elderly whose costs have rocketed in the past decade, has already imposed price controls. "If anything is going to save us from national health insurance," says Craig Campbell, chief of benefits planning at Southwestern Bell, "it will be a form of managed care."

The term refers to the array of systems for financing the health costs of employees without giving them carte blanche to spend what they like, as under the still-widespread "indemnity" system (see table). But what if the impressive savings from point of service turn out to be just another pause before the trip on the double-digit escalator resumes?

JEFF BARRY

A free Pap smear, here being jointly analyzed for the Harvard Community Health Plan, cuts expenses.

AMONG DOCTORS, doubters are easy to find. "It's foolish to expect to control health care costs through competition," declares Dr. Arnold S. Relman, editor of the *New England Journal of Medicine*. The problem, he says, is that the suppliers of health services—doctors—are uniquely able to influence demand. The best way to get a grip on costs, Relman argues, is to develop improved "outcomes" data that tell which operations and tests work best and which are wasteful or risky. With that kind of information, the medical system will be able to heal more efficiently and safely than now.

Yet there's no denying that the more closely health costs are managed by insurers or health networks, the lower the premiums and the slower the inflation. Precisely why comes clear from comparing managed care's three basic forms.

■ **UTILIZATION REVIEW.** Only a decade ago nearly all group health insurance provided simple "indemnity" reimbursement: Insurers unquestioningly paid any bill that was not fraudulent. More and more they watch what doctors do in the hope of inducing them to save where they can. In the early Eighties company health plans began requiring prior approval of hospital admissions, except for emergencies. But medical care is like a balloon: Squeeze it here and it bulges there. As hospital stays declined, outpatient treatment surged. So like cops with radar to catch speeders, insurers and others cranked ever fancier software into their computerized claims-processing systems to catch overtreating and overbilling.

The scrutiny at Metropolitan Life's national claims analysis center in Westport, Connecticut, has a touch of the Orwellian. Computers crunch hospital data to spotlight inefficient institutions. Outpatient bills are screened for services beyond what the diagnosis calls for, and for "unbundling"—boosting the tab by charging separately for services that normally are billed together. Just one example: The computers kicked out a claim for a follow-up visit by a patient with hypertensive heart disease. The bill ought to have been about $60, but unnecessary tests and unbundling ran it to $615. The bill was bounced back to both doctor and patient.

Even a small percentage reduction in huge company health costs can send megabucks to the bottom line. Dr. Arnold Milstein of the Mercer Meidinger Hansen benefits consulting firm is in charge of evaluating some 200 utilization review programs, which he calls "persuasion machines" for influencing physician behavior. The best programs chop 5% to 8% from a company's health costs, he says. Alas, these are one-time savings. Thereafter, a company is back on its old inflationary curve, though at a lower base.

■ **PREFERRED PROVIDER ORGANIZATIONS.** Need a coronary bypass? A network called Capp Care can get it for you wholesale—$26,600, vs. a more typical $50,500.

continued

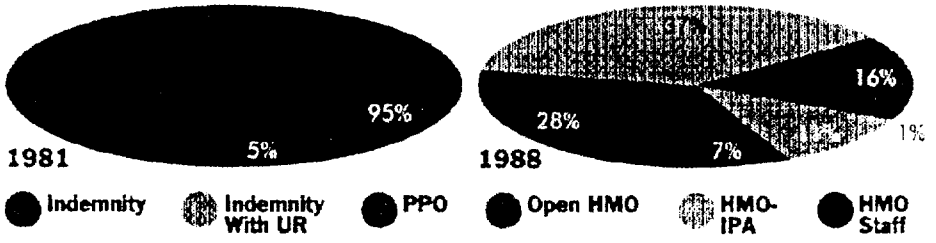
MANAGED MEDICAL PLANS SAVE MONEY . . .

	TYPE OF PLAN	WHAT IT OFFERS	METHOD OF COST CONTROL	ADVANTAGES TO PATIENT	DISADVANTAGES	MONTHLY PREMIUM* Annual inflation rate
LESS COST CONTROL	Indemnity	Services from any doctor or hospital	Claims audit necessary for fraudulent claims	Choice of any doctor or hospital	Claim forms to file; preventive services not covered	
	Indemnity With UR	Services from any doctor or hospital	Prior approval required for hospitalization and certain outpatient procedures	Choice of any doctor and access to any hospital, after prior approval	Additional paperwork to get approval of some services; preventive services not covered	
	PPO	Services from any doctor or hospital, but at lower cost to employee using network	Discounts negotiated with hospitals and doctors; prior approval required for hospitalization and some outpatient procedures	Higher rate of reimbursement within network	Lower reimbursement outside network; additional paperwork to get approval of some services; preventive services not covered	
MORE COST CONTROL	Open HMO	Services from any doctor or hospital, but at lower cost to employee using network	Within network, family doctors manage utilization of services; hospital and physician fees are discounted	Within network, lower co-payments; preventive care covered; no claims forms	Higher cost for services outside network	
	HMO-IPA	Services from any hospital or independent doctor affiliated with HMO	Family doctors manage services; hospital and physician fees are discounted	Low co-payments; preventive care covered; no claim forms	Must use approved doctors and hospitals	
	HMO Staff	Services from hospitals under contract with HMO or salaried doctors at its medical centers	Family doctors at HMO medical centers manage services; hospital and physician fees are discounted	Low co-payments; preventive care covered; no claim forms	Must use medical center doctors and approved hospitals	

SOURCE FOR TABLE AND CHARTS: CIGNA CORP.

* Nationwide average family premium paid to insurer, including any portion paid by employee.

. . . AND ARE WINNING MARKET SHARE



Cigna's spectrum of health plans (table) shows that as managerial control tightens, costs and the anticipated inflation rate shrink impressively. In 1981, aside from a small number in staff, group, and other HMOs, all U.S. workers were in unmanaged "indemnity" health plans; today fewer than half are.

Based in Fountain Valley, California, Capp Care is one of dozens of preferred-provider organizations (PPOs) that sprang up in the mid-Eighties when employers and federal medical programs found groups of hospitals and doctors willing to cut prices in return for an assured volume of patients. Think of PPOs as the medical equivalent of discount clubs whose members cart off bargain washing machines, except that the employer pays the dues and pockets most of the savings.

The number of people eligible to use Capp Care's services leaped last year from 1.1 million to 1.5 million. More and more Blue Cross associations, insurers, and medical groups are lining up these discounters. From practically nothing several years ago, total PPO membership has grown to about one-sixth of those covered by company health plans. PPOs are growing at the expense of indemnity plans. Employers view them as a cost-saving compromise for workers who resist joining an HMO.

In fact, there's no medical enterprise to join. Some PPOs are nothing more than brokered arrangements, which tiny staffs can supervise because insurers or medical groups handle all the paperwork. Employees are not obliged to use the PPO. But to encourage them to do so, companies pay 90% or even 100% of the bill instead of the usual 80% and will even waive deductibles. But there's rarely a gatekeeper-doctor. And neither doctors nor hospitals are "at risk" as in HMOs, which stand to lose if the annual cost of treatment exceeds their subscription income. In short, PPOs offer indemnity health care in carload lots. However, the package often includes utilization review as well as the screening of doctors and hospitals for quality.

A year ago BP America (with the help of the Coopers & Lybrand accounting firm) launched a PPO comprising only hospitals, not doctors, for non-unionized workers. Hospital costs for these employees stayed flat. Down the road, BP looks for annual escalations of 5% to 10%. Southern California Edison has figures almost as good. So does BellSouth, which put together a hospital-only PPO with the help of Blue Cross; next year the company plans to bring in doctors.

Trouble is, inflation can return with a vengeance. In 1984, Florida's Dade County School Board offered its teachers a PPO plan run by Metropolitan Life. Until 1988, says assistant superintendent Susan Weiner, ev-

erything seemed "wonderful." But despite utilization review, she says, costs began to zoom: "We saw the doctors in the county making up in repeat visits what they were losing in discounts." In place of the PPO, the school board now offers a point-of-service plan built around Met Life's HMOs.

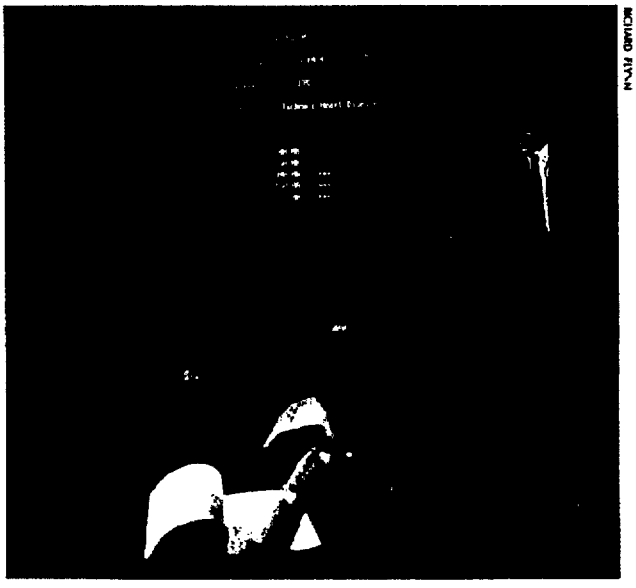
■ HMOs. On the spectrum of managed care, this is where employers start to get a firm grip on costs. Most primary-care doctors in HMOs are on salary or receive a flat amount based on the number of patients who have chosen them. They may get a bonus if the plan has a good year financially. So they have nothing to gain by running up your bill. For HMO members there's no big bill anyway—at most a modest "co-payment" of $10 per office visit, to deter those who would hog the doctor's time.

The new point-of-service feature adds some luster to traditional HMOs. In 1987 and 1988 they were tarnished by the same trends that drove up health costs in general. The government clamped down on Medicare and Medicaid spending, and hospitals and doctors made up for lost income by raising fees for people in private health plans. The AIDS epidemic and new feats such as liver transplants costing as much as $250,000 swelled expenses. Many HMOs wound up in the red, and Maxicare, one of the biggest, filed for bankruptcy in March 1989. To stanch losses, some of the plans boosted premiums as much as 20%.

Quite a few employers are disillusioned. A Towers Perrin survey shows that only 51% of them believe that HMOs provide better value for the money than other health plans. Many benefits executives have a strong hunch that HMOs siphon off the young and healthy who require little care, thus forcing premiums higher in indemnity plans that attract sick people who already have close ties with doctors outside the network.

Most HMOs don't deserve the bad reputation. William Boyles, editor of the *Health Market Survey* newsletter in Washington, D.C., rates about two-thirds of the country's 600 HMOs as satisfactory or quite good. He says about one-third—generally with small memberships—are "schlock operations" that have indeed tried to skim off the good risks. But the leveling of total HMO enrollment masks a profound shakeout. The weaker outfits have been folding or merging into stronger ones.

The most efficient HMOs are usually the "group" or "staff" type, in which salaried physicians work solely for the organization at its own medical centers. Some are so successful they have been in no hurry to offer the new opt-out feature that Allied-Signal finds so attractive. Examples: Kaiser Permanente, the California-based king of HMOs, whose membership jumped last year by a record 600,000, to a total 6.2 million, and the flourishing Harvard Community Health Plan, with 400,000 members and an 8%-a-year growth rate. Harvard is considering a point-of-service option but has no plans to become a national HMO. Says President Thomas O. Pyle: "The economics of scale derive from increasing your market share within a region."



RICHARD BRYAN

Ripoffs stop at Met Life's Connecticut claims-analysis center, where computers spot padded doctors' bills like the one on the screen.

HMOs save money in myriad ways, and it all starts with the gatekeeper-doctor. Bothered by chest pains? Heart disease is only one of a dozen possible reasons. Short of serious symptoms, the plan's family physician must rule out the other possibilities before sending you to a cardiologist. If you went directly to one, as allowed in an indemnity plan, he too might rule out heart trouble—but he might also go ahead with expensive tests.

Sensitive to talk that they skimp on care, HMOs survey their members to catch any dissatisfaction. This has been honed to a high art at U.S. Healthcare in Blue Bell, Pennsylvania, a type of HMO called an independent practice association (IPA) because its doctors also see other patients. "U.S. Healthcare tells us what the patients think of us," says Dr. David J. Badolato, a family physician in the network. Doctors who don't maintain a variety of standards are dropped.

HMOs' biggest economics are in hospitalization, where they continue to chip away. For people under 65 in Cigna's staff HMO in Phoenix, the hospitalization rate is just about the lowest anywhere: 270 days a year per 1,000 members, barely half the average at indemnity plans. Most mothers get a night's sleep after childbirth and finish resting up with baby at home. Following surgery, many patients are discharged to a less expensive recovery center or are supplied at home with intravenous antibiotics, oxygen, and a nurse.

Patients in HMOs are less likely to go under the knife. "For every ten tonsillectomies done on the outside, we do one," says Dr. Paul Lairson of Kaiser Permanente. Kaiser also performs fewer hysterectomies, he says. In the Los Angeles area, where 30% of women with private insurance have their babies by Caesarean section, Kaiser has reduced the ratio to 16%.

Other savings turn up, big and small. Don't expect a chest X-ray unless there's a good reason; it won't catch lung cancer early, Kaiser says. Members of U.S. Healthcare are only half as likely to wind up in a psychiatric hospital; the HMO favors outpatient care for mental illness and substance abuse. It also deters excessive medical tests by paying outside laboratories and radiologists a flat annual fee. But like other HMOs, this one covers preventive care that indemnity plans don't. Beyond an appropriate age, free tests for colorectal cancer and mammograms are aggressively encouraged.

TWO OBSTACLES have barred HMOs from becoming the mainstream of medicine. There's that persistent suspicion that they get more than their share of the young and healthy. Such talk steams Glenn Hackbarth, vice president of the Harvard Community Health Plan. Membership there *is* slightly younger, he allows, but it includes lots of women in the expensive childbearing years. To counter the creaming argument, HMOs

have begun to offer discounts to employers whose work forces are significantly younger or cost the plan less money.

The new point-of-service plans are aimed squarely at the other objection, that HMOs force you to stick to a list of participating doctors and hospitals. The marketing approach could not be simpler: Lure 'em in by allowing 'em out. The scenario at Prudential, says senior vice president Samuel Havens, "is that as time goes on, a larger and larger percentage of patients will use the network. And if the trend goes far enough, there will be no more out-of-network services."

To keep employees in the network for Allied-Signal's plan, Cigna tried to enlist many doctors who were already seeing Allied employees. It had the most trouble in New Jersey, a stronghold of indemnity health insurance. Recruiting was far easier in Phoenix, where Allied has a large aircraft jet engine plant and group health plans have a big following. Cigna's network has grown rapidly to accommodate Allied employees, who include most union members. Dr. Glen Stockton, an internist and family practitioner, joined it after some of them requested him. He prefers the HMO to the hassles of utilization review, where "you can get a long-distance call from some faceless person wanting to know why you admitted somebody to a hospital."

And how is the new plan going down with Allied-Signal employees in the area? A sampler of comments runs the gamut. One woman is "very pleased" with her HMO family physician, and a man whose son needed knee surgery says things worked out "wonderfully well." But when another's son had a sports injury, the father had to "call Cigna every day" for permission to see a specialist. Getting past the primary-care doctor to the allergist or dermatologist can be difficult, a couple of other workers complain. Despite the problems, the system is working. An impressive 83% of the eligible employees' health care dollars are being spent within the network. At Southwestern Bell the figure is 80% and rising.

CAMPBELL of Southwestern Bell gives this advice to companies considering a point-of-service plan: Make sure all the stakeholders—employees, doctors, and hospitals—accept the change and make clear that the company is going to "stay the course." Winning over the employees is the challenge today. A few years from now it could be finding enough gatekeepers. Fewer students in medical schools are seeking careers in primary care these days. A new Medicare payment plan for doctors—which raises fees for family physicians and cuts them for some specialists—may reverse this trend, but nobody is sure yet.

Another worry: malpractice suits. In a Michigan case settled out of court, a woman with cervical cancer tried to collect from an HMO whose gatekeeper-doctor refused to allow a Pap smear. Except for a few companies that take care of some employees at their own medical clinics—Gillette, Goodyear—employers contract out all their health care to an insurer or HMO. Until now, that has kept their deep pockets beyond the reach of malpractice suits. But if the company adopts a health plan with a powerful new inducement to go through a gatekeeper, could it be found liable if something went wrong? Com-

"For every ten tonsillectomies done on the outside, we do one," says Lairson of Kaiser. In Los Angeles, Kaiser has halved the ratio of Caesarean births.

panies like Allied-Signal believe they have skirted the danger by relying on the HMO to screen doctors and by allowing employees free choice outside the plan.

The long-term answer, both to malpractice suits and wrestling down costs, is to take the guesswork out of medical care. Ellwood of InterStudy says that new data pinpointing the most effective treatments for 18 major ailments could begin to alter patterns of care within two years. The possibilities excite Kennett Simmons, chief executive of United HealthCare, a big Minneapolis HMO company: "What we have that we never had before is massive amounts of information in computer systems and the computer power to get it out and use it."

That is especially welcome news as the results of plans like Allied-Signal's draw more companies and employees to HMOs—because they, more than any other providers of health care, have the incentives to use new data to bring costs down. Among U.S. companies overall, the killer expense is still definitely at large. But there's reason to hope that some are at last closing in on it. ◼

Is There a Cure for Rising Health Care Costs?

Curbing the cost of health insurance has become a frustrating job. Quantum leaps in medical insurance premiums have prompted companies to adopt a variety of cost-containment measures, with little success. According to Noble Lowndes, an international employee benefits consulting firm, companies now pay more than $3,000 each year per employee for medical insurance, up from $710 in 1980. Put another way, these costs have jumped from 4.9 percent of company payrolls to 13.6 percent.

Some observers believe that available cost-saving measures simply can't match exploding costs for medical treatment. The population is rapidly aging, while infant mortality rates are dropping. Meanwhile, malpractice suits have encouraged "protective medicine," prompting wider use of specialists and high-cost technology. And of the $42 billion cut in Medicare funding Congress enacted last year, $32 billion will come from reduced payments to providers, who will probably try to recoup their losses on the backs of corporate health plans.

Others say employers have been slow to adopt cost controls. If companies have hesitated, it is partly because many cost-containment techniques are too new to have produced definitive results. Increasingly, it seems, checking corporate health costs requires a variety of approaches. So far, active health care management seems the most promising.

Sharing costs with employees

Many analysts believe that health care costs have gone out of control because third parties bear most of the brunt rather than the patients themselves.

Thus, early efforts at health-cost containment shifted a greater share of health cost expenses to employees. Between 1982 and 1988, annual employee contributions to health insurance premiums grew four times as fast as those of employers, according to the U.S. Bureau of Labor Statistics. By 1988, 45 percent of employees in large and midsized companies were contributing to their premium cost, up from 29 percent in 1980. Still, nearly half of all firms require no contributions from single employees. In addition, employers continue to pay more than two-thirds of total premiums for plans that require employee contributions.

> Active health-care management may represent the best chance to date for reining in runaway medical expenses.

reports Hewitt Associates, a national employee benefits consulting firm.

Some employers have curbed premium costs by using health plans with higher deductibles. Deductibles of $100 or $200 are most common for individual employee plans, according to Hewitt, representing 29 percent and 23 percent of all such plans, respectively. A $300 deductible is most common among family plans. There is some evidence that larger deductibles produce the desired results. Rand Corp. has found that employees with a $100 deductible used their health plans 19 percent less than employees with no deductible, and those with a $500 deductible used their plans 27 percent less. Still, cost-sharing has not yet reached the point at which people carefully weigh the benefits of health care against its cost, according to a recent report from the Health Insurance Association of America.

Curbing health care needs

Meanwhile, employers and health insurers, seeing potential cost savings in preventative care, are placing new emphasis on wellness and employee assistance programs.

Many employers now sponsor at least one wellness program. Most effective, they say, are screenings for hypertension and cholesterol, on-site exercise plans, and stop-smoking programs. These efforts are thought to reduce absenteeism and increase productivity, as well as clip health care costs. Still, only one-quarter of CEOs surveyed by national benefits consultants William M. Mercer Inc. have actually found preventive programs to be cost-effective. Other studies suggest the programs are used mostly by employees who are already health conscious. The real challenge may be to broaden participation.

Employee assistance programs (EAPs) treat substance abuse and problems of mental health. These programs may be more cost-effective than the wellness programs. By some estimates businesses recover $3 to $5 for every $1 they spend on EAPs.

As with many other health plan initiatives, it's too early to judge whether EAPs and weliness programs will help contain health-claims costs. "You have to look at what you could save over the next two decades," says Edward Maguire, senior vice president of group operations at Sapers & Wallack, a Cambridge, Massachusetts-based insurance brokerage. "If a company screening program catches one case of high blood pressure, and thereby prevents an employee s stroke, the program has paid for itself."

Maguire and others say companies interested in employee assistance programs should look for insurance carriers with special expertise in this

area. "Some employers choose a separate carrier for substance abuse and mental health treatment counseling or peel this area off for separate utilization review," Maguire notes.

Tightening the rules

Most experts believe cost-sharing and prevention programs deal with only part of the health cost challenge. More important, they say, is when and how someone receives medical care.

Recently, employers have been more aggressive in evaluating the need for treatment. Nearly two-thirds of corporate health plans require, or provide a financial incentive for, patients to get a second opinion before surgery, according to Hewitt. Unfortunately many employers have found that encouraging the use of second opinions does not necessarily reduce medical claims.

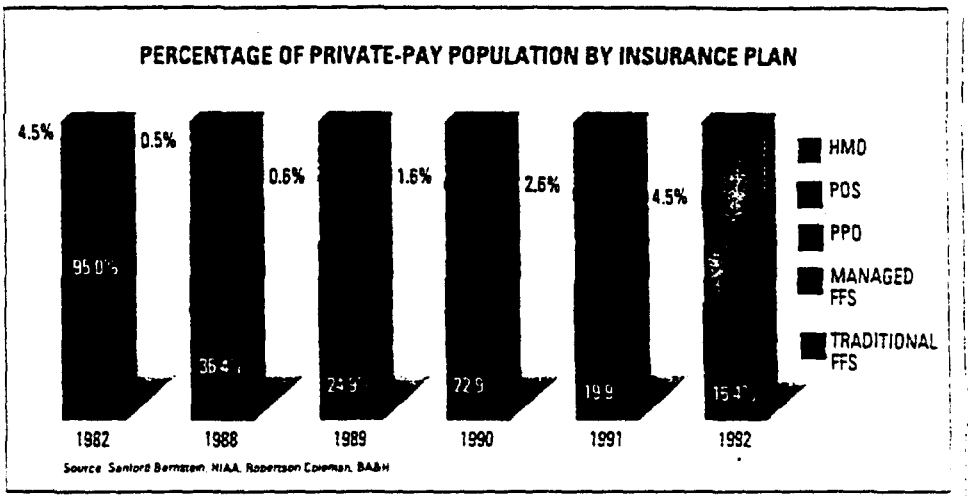
More effective has been utilization review. More than three-quarters of employer plans now use measures such as precertification of hospital stays and direct management of employee medical treatment, and most of those companies report savings. Companies can purchase case review directly from insurance carriers or from a variety of third-party vendors.

To some extent, utilization review may simply shift costs; limiting inpatient hospital stays may simply increase outpatient expenses. But generally, employers feel utilization review makes physicians, hospitals, and employees more cost conscious and reduces medical claims over time. Some companies report savings of 6 percent or more.

Among other cost-management methods, excluding coverage for preexisting conditions is the most prevalent, represented in about two-thirds of company plans. According to Hewitt, plans with this limit have produced cost savings of nearly 40 percent. At the same time, many plans have expanded their coverage to include lower-cost treatments, such as home health care and hospices.

Alternative methods of delivery

The search for lower costs has spawned a variety of alternative delivery systems built on the managed-care concept. While most employees are still covered by fee-for-service (indemnity) plans, more than 70 percent of employers now offer a health maintenance organization (HMO), in which medical treatment is prepaid and delivered by the HMO provider organization. About 30 percent of employers use a preferred provider organization (PPO), which supplies medical treatment through a designated network of physicians and hospitals at discounted rates.



Many observers expect managed care programs, particularly point-of-service plans, to represent an increasing share of employee health-care plans.

Typically, HMOs and PPOs are offered as alternatives to traditional plans. Nearly half of the nation's 5,000 largest employers recently surveyed by Mercer said they use financial incentives to get their employees to use a managed care program; another 23 percent said they will probably do so in the future. Of the companies that use incentives, about 40 percent report they are working.

Employee participation in HMOs varies widely among companies, according to Hewitt. But 39 percent of employers reported increased participation between 1988 and 1989. Between 1987 and 1989, according to the Health Insurance Association of America (HIAA), per capita premiums for group staff HMOs grew at a rate that was four percentage points lower than the rate of premium growth for unmanaged indemnity plans. But other studies have been less conclusive.

The first studies of PPOs appear more consistent. Nearly three-quarters of employers in a Hewitt study reported PPOs helped limit medical plan costs. In addition, HIAA has found that overall rate increases were two percentage points lower for PPOs during the same two-year period than the hikes for unmanaged plans.

Point of service plans: the panacea?

The newest kids on the alternative-delivery block are point of service (POS) plans. Sometimes described as an open-ended HMO, a POS plan allows an employee to use any physician or hospital, but covers a larger share of costs for treatment delivered by the plan's own provider network. This flexibility often makes it easier for a company to offer a POS plan as its only health care option. Many observers expect these plans to grow faster than other alternative-delivery systems (see graph, above).

Most employers just moving into managed care choose point-of-service plans because they offer the best balance of cost containment and provider choice, says Robert Chernow, vice president of managed care group services at Metropolitan Life. "On the cost-containment continuum, they fall in the middle of managed care plans," he says. According to Met Life's experience, POS plans are holding average annu-

al medical cost increases to about 15 percent, compared with 12 percent for HMOs and 18 percent for PPOs. Even though they allow participants to go outside the network, Chernow says, POS plans can outperform PPOs because they use primary-care physicians to control treatment within the network.

Landmark POS plans have been created by Prudential with Southwestern Bell Corp. and by CIGNA with Allied-Signal. Prudential launched the CustomCare plan for Southwestern Bell in 198". It uses networks of health care providers in 13 of the 43 locations that make up Prudential's national health care system. Southwestern employees who use the network pay $10 per office visit and receive full coverage for all other costs, with no deductible. If the participants use providers outside the network, they have a $350 deductible per person (up to $1,050), and get only 80 percent coverage for remaining medical expenses. The plan, which is funded by Southwestern Bell, includes a risk-sharing agreement that requires Prudential to shoulder expenses that exceed a certain expenditure target. This gives Southwestern Bell a better shot at predicting future health care costs. If claims are lower than expected, Prudential gets a share of the savings.

In the three years since the plan was adopted, the percentage of Southwestern Bell employees using CustomCare has continued to grow, says Craig Campbell, the company's associate director for benefit planning. In the plan's first year, related health care costs rose 12 percent, compared with an average 18 percent to 20 percent increase nationwide. In the second year, cost hikes related to the plan were 7 percent, while national increases averaged 20 percent to 24 percent. Because the plan covers Southwestern Bell retirees, it has also curbed the company's retirement benefits liabilities. The program's success has brought other large companies to Prudential, says Anne Bossi, vice president of Prudential's southwestern group operations. Companies using other Prudential POS plans include AT&T, Bell Atlantic, and Marriott.

CIGNA guaranteed Allied-Signal an annual single-digit, fixed rate of increase for the first three years of its experimental POS program, which ends in March. Network participants pay minimal deductibles and small copayments for physician office visits and prescriptions. Employees who do not use the network pay deductibles equal to 1 percent of base pay for individual coverage and 3 percent of base pay to cover their families. They receive only 80 percent coverage—up to a maximum of 12 percent of their base pay—on a more limited number of services than are covered through network providers.

Allied-Signal had used a variety of CIGNA health plans for nearly 10 years, but decided to "do something drastic" when it found costs rising 39 percent in 198". In that year, the company and its employees paid nearly $355 million for health care, says Edwin M. Halkyard, senior vice president of human resources at Allied-Signal. "If the trends had continued, our total health care bill could have reached $613 million by 1990." CIGNA's Health Care Connection is the health insurance offered to Allied-Signal's salaried employees, who previously had used a total of more than 100 indemnity plans and HMOs. Wellness and employee assistance programs are available through a specialized CIGNA network.

CIGNA processes the claims and guarantees a fixed rate of cost increases, but the program is self-financed by Allied-Signal through a company sinking fund. After 18 months of operation, the per capita cost for network participants was $2,450; costs under traditional fee-for-service plans would have been $3,200, Allied-Signal estimates. More than three-quarters of network participants use the plan almost all of the time and have had a much lower rate of hospital admissions and shorter hospital stays than employees nationwide. Many other large companies have joined the CIGNA network, including General Electric, Sears, Procter & Gamble, and Martin Marietta. None of these is using CIGNA exclusively yet, says Robert L. McGoldrick, senior vice president of national accounts at CIGNA.

A dynamic situation

Increasingly, managed-care plans are choosing providers for their networks based on their approach to medical treatment as well as their willingness to discount fees. This, the plan administrators hope, will promote competition among physicians and hospitals to provide more cost-effective health care.

As part of this effort, insurers are trying to identify the most cost-effective treatments for specific diagnoses. Using the experiences of existing point-of-service networks, Prudential now evaluates the track records of physicians before signing them up, says Amy Knapp, vice president of managed medical operations. More careful selection of providers is now built into the system, she says, and contracting is based on negotiated fee schedules.

Employers have also become more interested in the caliber of the care. "It's becoming a standard part of the proposal process for the employer to visit the site of the health plan and meet with the medical director and quality assurance personnel," says Knapp.

Most employers will continue to offer a variety of health plans, but there's a clear movement toward limiting plan options and concentrating on managed care. "That way, you put your risk pool together and eliminate the potential for the managed care plans to skim off the healthier employees," says Edward Maguire of Sapers & Wallack.

The success of managed care hangs on whether employees use this health plan option, which in turn depends on how well companies sell the concept to their employees, says David Young, a benefits consultant with The Wyatt Co. "The most attractive argument is that it will cost employees less over time," he notes.

But while managed care is all the rage, no one is ready to say that it's the final remedy for rising health costs. "The best thing a CFO can do is to pick an insurance broker who has a lot of expertise in this area and is not just selling health insurance as a sideline," says Maguire. "This is a very dynamic situation. There's a different solution every day." ■